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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,019	12/21/2000	Debra Bernstein	10559-268001/ P9023	3295

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EXAMINER	
RAMPURIA, SATISH	

ART UNIT	PAPER NUMBER
2191	

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/747,019	BERNSTEIN ET AL.	
	Examiner	Art Unit	
	Satish S. Rampuria	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/06/04,12/01/04* [EIDS]
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

1. This action is in response to the amendment received on 01/14/2005.

2. The rejection under 35 U.S.C. §101 to claims 22-27 is withdrawn in view of applicant's amendment.

3. New Claims added by the applicant: None.

4. Claims amended by the applicant: 22-27 to overcome the 35 U.S.C. §101 issue.

5. Claims pending in the application: 22-33.

Information Disclosure Statement

6. An initialed and dated copy of Applicant's IDS form 1449 filed on 12/06/2004 is attached to the instant Office action.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 22-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,378,125 to Bates (hereinafter called Bates) in view of US Patent No. 5,815,714 to Shridhar et al. (hereinafter called Shridhar).

Per claim 22:

Bates disclose:

- in parallel hardware threads executing in a processor comprising a plurality of microengines (Abstract, "A computer system... method to facilitate debugging of multi-threaded computer program"), receiving a source code line to be break pointed in a selected microengine (col. 1, lines 44-47 "once the break point is reached... program is halted... steps through... instructions... step operation").

Bates does not explicitly disclose determining whether the source code line can be break pointed; if the source code line can be break pointed, identifying the selected microengine to insert a break point into, which microengine threads to enable breakpoints for, and which microengines to stop if a break point occurs; and if the source code line cannot be break pointed, signaling an error.

However, Shridhar discloses in an analogous computer system determining whether the source code line can be break pointed (col. 6, lines 19-21 "decoder... determines... if there is an embedded debug command present in the source code line"); if the source code line can be break pointed (col. 6, lines 44-46 "if there is a "HALT" at the end of the debug command"), identifying the selected microengine to insert a break point into (col. 5, lines 64-66 "determines the type of debug command... generates... break point"), which microengine threads to enable breakpoints for, and which microengines to stop if a break point occurs (col. 5, lines 17-26 "Break point commands... "HALT" commands, which result in the termination of the simulation... and "CONT" commands which performs a debug function as directed..."); and if the source code line cannot be break pointed, signaling an error (col. 5, lines 20-22 "HALT commands... termination of simulation... due to... serious errors").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of determining the break point code and if found insert the break point as taught by Shridhar into corresponds to the method of debugging multithreaded computer programs as taught by Bates. The modification would be obvious because of one of ordinary skill in the art would be motivated to determine the break point and insert the breakpoint to eliminate the manual manipulation for better performance as suggested by Shridhar (col. 1 and 2, lines 52-67 and 1-16).

Per claim 23:

The rejection of claim 22 is incorporated, and further, Bates disclose:

- wherein identifying further comprises generating a break point routine by modifying a template of instructions stored in a debug library (col. 7, lines 34-37 "The breakpoint manager routine ... would be performing... corresponding action... regard to the breakpoint table (library)").

Per claim 24:

The rejection of claim 23 is incorporated, and further, Bates disclose:

- wherein identifying further comprises inserting a break point at the source code line and a branch to the source code line (col. 3, lines 32-34 "Thread identification... break points... user inserted interruptions to program execution" and col. 7, lines 66-67 "the received thread identifier is compared with each thread identification control point see in the received thread has hit one of the thread identification control point").

Per claim 25:

The rejection of claim 24 is incorporated, and further, Bates disclose:

- executing the parallel hardware threads until the break point is encountered (col. 6, lines 11-14 "break point routine... hitting (encountered) break point... determination is made... whether... system... contained... the break point table"); and
- executing the break point routine (col. 6, lines 44 "break point routine"), the break point routine stopping selected threads (col. 5, lines 6-7 "resumes execution of the program") and determining which microengine sent an interrupt (col. 5, lines 15-16 "as required in order to determine what type of control point was encountered and the associated processing").

Per claim 26:

The rejection of claim 25 is incorporated, and further, Bates disclose:

- displaying program information to a user (col. 10, lines 3-6 "FIG. 8, a graphical user interface is illustrated showing a portion of computer program").

Per claim 27:

The rejection of claim 26 is incorporated, and further, Bates disclose:

- resuming execution of the parallel threads in response to a user input (col. 5, lines 6-7 "user provides an input that resumes execution of the program").

Claims 28-33 are the system claim corresponding to method claims 22-27 respectively, and rejected under the same rational set forth in connection with the rejection of claims 22-27 respectively, above.

Response to Arguments

9. Applicant's arguments with respect to claims have been considered but they are not persuasive.

In the remarks, the applicant has argued that:

(i) Bates does not contains such teaching or suggestions for the limitation "receiving a source code line to be break pointed in a selected microengine" as recited in claims 1 and 28.

(ii) Shridhar does not teach or suggest the limitation "determining whether the source code line can be break pointed" as recited in claim 1 and 28. Accordingly, claims 1 and 28 are not obvious by Bates and Shridhar.

Examiner's response:

(i) Regarding the limitation "receiving a source code line to be break pointed in a selected microengine", Bates provides an apparatus, program product, and method of debugging in a multi-threaded computer program. Bates discloses breakpoints are intended to halt the execution which is a variable or a conditional trigger, it would obviously have source code where a variable is designed for a breakpoint (see col. 5,

lines 20-27). Applicant only makes general allegations and does not point out any errors in the rejection. Therefore, the rejection is proper and maintained herein.

(ii) Regarding the limitation "determining whether the source code line can be break pointed". It is noted that the rejection clearly points out where the combination of Bates and Shridhar teach the claimed features and why it would have been obvious to combine their teachings. Rather, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, the rejection is proper and maintained herein.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**. The examiner can normally be reached on **8:30 am to 5:00 pm** Monday to Friday except every other Friday and federal holidays. Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: 571-272-2100**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Tuan Q. Dam** can be reached on **(571) 272-3695**. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria
Patent Examiner
Art Unit 2191
05/02/2005

TUAN DAM
SUPERVISORY PATENT EXAMINER